

NEW RECORDS OF A PALEARCTIC FLEA BEETLE,
PSYLLIODES AFFINIS, IN EASTERN
NORTH AMERICA (COLEOPTERA: CHRYSOMELIDAE)

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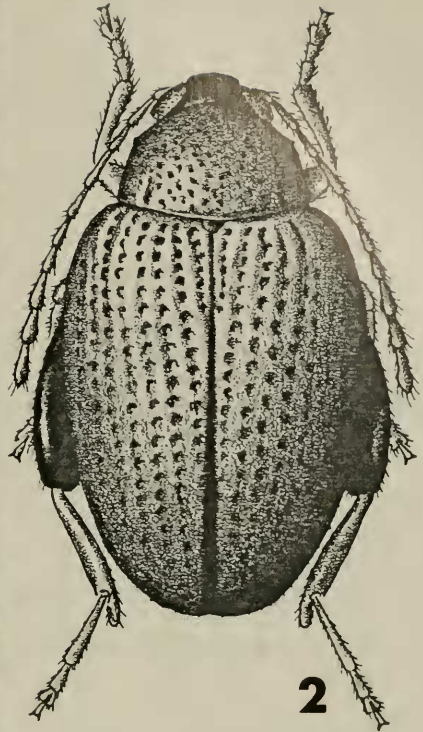
Abstract.—*Psylliodes affinis* (Paykull), a Palearctic flea beetle known in North America only from two counties of eastern New York, is reported from additional New York counties and from Pennsylvania and Ontario. The known distribution is listed and mapped, and a brief review of its distribution and biology in Europe is given. An adult diagnosis and habitus and a photograph of adult feeding damage on bitter nightshade (*Solanum dulcamara*), its principal host plant in eastern North America, are also provided.

In America north of Mexico, the alticine genus *Psylliodes* Latreille is represented by 12 species, five of which are introduced: *cucullata* (Illiger), *chrysocephala* (L.), *napi* (F.), *picina* (Marsham), and *affinis* (Paykull). All species of *Psylliodes* are distinctive by having a 10-segmented antenna.

The first report of establishment of the Palearctic *P. affinis* in North America was based on collections from bitter nightshade, *Solanum dulcamara* L., in Albany and Greene counties, New York, in July 1968 (Anon., 1968). *Psylliodes affinis* also has been intercepted at ports of entry in the United States on dahlia roots that originated in Poland, and in a package of rose stock shipped from Germany (Anon., 1968).

Psylliodes affinis, common throughout most of Europe, also occurs in Siberia. This specialized feeder on solanaceous plants prefers bitter nightshade but often feeds on potato, *S. tuberosum* L. Usually only a minor pest of potato, it sometimes causes severe, local injury. Adults of *P. affinis* may attack other solanaceous plants, including tobacco (*Nicotiana* spp.), tomato (*Lycopersicon esculentum* Mill.), black henbane (*Hyoscyamus niger* L.), *Lycium* sp., and occasionally hops (*Humulus* sp., Cannabinaceae).

In Europe, overwintered adults become active during late April or early May and produce characteristic, small, round holes in the leaves of their hosts (Fig. 1). Oviposition begins about one month later, with the eggs laid singly or in small groups near the host plant; the eggs are elongate-oval, yellow, and 0.6–0.7 mm long. The whitish larvae feed on rootlets and make superficial (and occasionally deep) galleries or tunnels in roots, with feeding lasting approximately one month. Pupation takes place in the soil, and adults of this univoltine species emerge in about 3–4 weeks. Although larval injury is considered non-economic, adult feeding



Figs. 1, 2. *Psylliodes affinis* and host plant. 1, Adult feeding damage on bitter nightshade, *Solanum dulcamara*. 2, Dorsal habitus (taken from Anonymous, 1968; drawing by R. E. White).

may severely damage potato foliage during September. Several workers have implicated the adults as minor vectors of the virus that causes potato leaf curl.

Information on distribution, phenology, and economic importance of *P. affinis* in Europe was taken from Heikertinger (1915), Tölg (1915), Murphy (1923), Walton (1925), Newton (1929), Blunck (1931), and Elze (1931). Additional references may be consulted in Balachowsky (1963).

In May 1980, we collected *P. affinis* in the vicinity of Ithaca, New York (Hoebeke, 1980), and subsequently at other New York localities and in Pennsylvania and Ontario. The Ontario collection represents the first record of this Palearctic species in Canada. Herein, we summarize and map the known North American distribution of this introduced species (Fig. 3). Additional records from the Ithaca area, obtained from May–August, 1980–82, are not given. All collections listed below were made from bitter nightshade, *Solanum dulcamara*.

United States: NEW YORK: *Cortland Co.*, 11 July 1981, AGW & ERH. *Erie Co.*, Buffalo (Allentown), 12 June 1982, ERH; Tonawanda, 31 August 1980, ERH. *Livingston Co.*, Letchworth State Park, 5 mi. E. of Perry, 18–21 June 1980–82, ERH. *Monroe Co.*, along Rt. 31, Egypt, 31 July 1982, AGW & ERH. *Nassau Co.*, Planting Fields Arboretum, Oyster Bay, Long Island, 29 May 1981 and 28 May 1982, AGW & ERH. *Niagara Co.*, Niagara Falls, 12 June 1981, ERH. *Onondaga Co.*, Solvay, 26 June 1982, AGW & ERH. *Seneca Co.*, Hayts Corners,



Fig. 3. Known distribution of *Psylliodes affinis* in eastern North America. Open circles represent original detection sites; closed circles represent new records and Tompkins Co., N.Y., records (Hoebeke, 1980).

24 June 1981, ERH. *Suffolk Co.*, Bayard Cutting Arboretum, Oakdale, Long Island, 30 May 1982, AGW & ERH; Flying Point, near Southampton, L.I., 30 May 1982, AGW & ERH. PENNSYLVANIA: *Bradford Co.*, Centerville, 25 June 1982, AGW. *Centre Co.*, State College, 18 May 1981, AGW. *Columbia Co.*, Numidia, 7 July 1982, AGW. *Dauphin Co.*, Harrisburg, 13 and 19 May 1981, AGW; Hershey, 16 June 1981, 17 May 1982, and 23 June 1982, AGW. *Lycoming Co.*, Jersey Shore, 5 August 1982, ERH.

Canada: ONTARIO: *Halton Co.*, between Hamilton and Burlington, Guelph line, 13 June 1981, ERH.

Even though *P. affinis* has not been collected on plants of economic importance in North America, it remains a potential pest of potato. This introduced chrysomelid (Fig. 2) may be distinguished by the following combination of characters: Adult length 2.0–2.8 mm, body ovoid, dorsal color light tan or brown, head and

ventral surface black, elytral suture narrowly bordered with dark brown or black, and hindfemur very large and black to reddish black.

Psylliodes affinis is at once recognized by its light tan or brown dorsal coloration; in general, all other North American species of *Psylliodes* are shiny pitch black to dark bluish green dorsally, with or without a metallic luster.

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